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Geneva Releases New Disease-Resistant Lettuce

by Linda McCandless

Liverpool, NY - 'Onondaga' is a new variety of head lettuce specifically bred for cultivation in New York. Released at the NYS Vegetable Conference on February 10 by plant breeders at Cornell University, it is the only lettuce resistant to both cucumber mosaic virus (CMV) and corky root rot. It derives CMV resistance from a wild species of lettuce called *Lactuca saligna*.

'Onondaga' lettuce.
PHOTO: Rob Way, Cornell
University

"Wild species are very difficult to use in breeding because of their distant relationship," said Richard W. Robinson, the vegetable breeder at the New York State

Agricultural Experiment Station in Geneva, NY. He developed the variety with Research Support Specialist Joseph Shail and virologist Dr. Rosario Provvidenti.

'Onondaga' is a cross between 'Saladcrisp' and 'Montello'. It is light green in color, with a crisp, firm head. It resists physiological disorders like bolting and tip burn and is a mid-season variety, according to Robinson. He is the only plant breeder who has ever been successful in breeding CMV resistance derived from *L. saligna* into domestic lettuce.

At the same conference, Robinson and Shail also released 'Whitaker', a new variety of squash that also derives its disease resistance from a wild variety.

"Conventional breeding at Cornell University is accomplishing improvements that would not otherwise be achieved," said Robinson.



No commercial seed company would undertake a breeding program so long, difficult, and uncertain of success as transferring disease resistance from *L. saligna* to lettuce, or *Cucurbita ecuadorensis* to squash.

"The squash and lettuce varieties we are introducing illustrate the importance of conventional breeding at public institutions such as Cornell University," said Robinson. "Biotechnology can be a very rapid way to breed for some traits, and private seed companies are doing an increasingly good job of breeding vegetable varieties, but neither biotechnology nor private seed companies have developed varieties such as 'Whitaker' squash, and 'Onondaga' lettuce."

Plant breeders at the Geneva Experiment Station seek to develop superior vegetable varieties and/or germplasm for further seed development by commercial seed companies. The new varieties are characterized by superior quality (for both the fresh and processed vegetable markets), insect and disease resistance, tolerance to cold weather, productivity, and growth habit.

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